

# DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING

## WILLIAM MAXWELL REED SEMINAR SERIES

### “Operando Imaging of Metal Additive Manufacturing”

**Sarah Wolff, Ph.D.**

The Ohio State University, Columbus, OH

#### Abstract:

Laser-based additive manufacturing is promising for its fabrication of complex, multi-material metallic parts with superior microstructures and mechanical parts. However, porosity in is common due to rapid solidification and can pose obstacles in qualification and certification. This talk will discuss the fundamental interactions that lead to porosity in the process. High-speed synchrotron X-ray imaging (up to 80,000 fps) experiments at the 32-ID beamline at the Advanced Photon Source show porosity mechanisms and material mixing in real-time.

#### Speaker Bio:



Dr. Sarah Wolff is an assistant professor in the mechanical and aerospace department at The Ohio State University. She was awarded the 2022 SME Outstanding Young Manufacturing Engineer Award and is an associate editor for Additive Manufacturing Letters. Her previous roles include an assistant professorship in the industrial and systems engineering department at Texas A&M University and an Enrico Fermi Fellow at Argonne National Laboratory. She graduated from Northwestern University in 2018 with a PhD in mechanical engineering. Dr. Wolff's expertise is in metal additive manufacturing and laser processing, particularly in the areas of in situ monitoring, high-speed X-ray

imaging, image processing, and microstructural characterization.

**Date:** Friday, October 13, 2023  
**Place:** Whitehall Classroom Building 110

**Time:** 3:00 PM EST  
**Contact:** Dr. Jonathan Wenk

Attendance open to all interested persons